College of Engineering, Technical and Vocational Education and Training

CETVET

FIJI NATIONAL UNIVERSITY

Research Newsletter

Issue 2026 01
(January to March 2026)

Message

for CETVET research office:

Welcome to our Newsletter for the first quarter of 2026. This has been one of our busiest quarters yet, marked not only by increased activity but also by a significant boost in productivity and achievements.
A highlight of the quarter was the vibrant CETVET Culture Celebration, which brought staff and students together to showcase diversity, unity, and shared values. We also take pride in celebrating the success of our staff and students who have been awarded fellowships and scholarships, reflecting our continued commitment to academic excellence and professional growth. In addition, a series of engaging guest lectures enriched our academic environment by bringing industry insights and expert perspectives to our community. The CETVET Seminar Series further strengthened knowledge sharing and collaboration through insightful presentations and discussions.
We are equally proud to recognize the achievements and milestones of our research students, whose dedication continues to contribute to innovation and scholarly excellence. We also warmly welcome our new research students of 2026 and look forward to supporting them in their academic and research journeys. Our strong industry partnerships and field trips have further enhanced practical learning experiences, bridging the gap between theory and real-world application.

We also proudly marked Global Surveyors' Day, recognizing the vital contributions of surveyors to sustainable development and infrastructure planning. Notably, innovative solar research at the School of Sciences has further highlighted our commitment to advancing sustainable technologies and impactful research. From campus to community, the FNU Food Science Team has led the UN FAO Fiji Food Security Initiative, demonstrating the real-world impact of our expertise and community engagement. Investing in people remains at the heart of everything we do, ensuring our staff and students are empowered, supported, and equipped to thrive in their academic and professional journeys. We also celebrate the awards, recognition, and staff qualification upgrades achieved this quarter, underscoring our commitment to excellence, professional development, and continuous learning. Finally, the quarter has seen a notable increase in publications and active participation in conferences, seminars, and workshops, reflecting our dedication to knowledge sharing, research dissemination, and professional growth. Our staff also took part in celebrating World Wildlife Day 2026, highlighting the importance of biodiversity conservation and sustainable environmental practices. Please enjoy reading the newsletter.

CETVET *Culture* Celebration 01

CETVET celebrated International Women's Day and Holi Celebration on 6th March 2026 at MB hall.

CETVET staffs got together to mark International Women's Day as a powerful reminder of the strength, resilience, leadership, and invaluable contributions of women in our families, communities, workplaces, and our nation. At the same time Holi significance was illustrated with colors and Holi song.

The celebration brought the CETVET family together in a spirit of unity, joy and cultural appreciation as vibrant colours marked the festival of love, friendship and new beginnings.

Moments like these reflect the diversity and strong community spirit that make the Fiji National University a place where cultures are celebrated and connections are strengthened.

02 *Fellowship* and scholarship

Mr. Usaia Gaunavou, Lecturer in Urban and regional Planning and Mr. Nischal Chandra, Assistant Instructor in Electrical Engineering have been awarded the prestigious Association of Commonwealth Universities (ACU) PhD fellowship. Mr. Usaia's PhD topic is "The climate- induced planned retreat of villages in Fiji – a socioenvironmental risk identification, assessment and mitigation" and Mr. Nischal's PhD topic is "Design and Analysis of Control Strategies for Power Quality Improvement in Grid-Connected Systems". Both Usaia and Nischal visited Commonwealth for a week of activities marking Commonwealth Day and celebrating the impact of the King's Fellows and the positive changes they are driving in Commonwealth Small Island Developing States (SIDS).

Photo credit: Ian Jones

Throughout the week, the King's Fellows participated in a series of events and engagements, including: attending the Commonwealth Day service at Westminster Abbey, followed by the Commonwealth Day reception at St James's Palace, where they were introduced to HRH King Charles III and discussed their research and the King's College Fellows Programme (KCFP). To conclude the week, the ACU co-hosted a roundtable with Octopus Energy at the Sustainable Markets Initiative (SMI) Summit at Hampton Court Palace, exploring how private sector–academia–government partnerships can accelerate climate resilience solutions for SIDS. The Fellows also met with the Fiji High Commissioner, His Excellency Mr. Jovilisi Suveinakama, to discuss their work and reflect on the significance of four Fellows from Fiji visiting the UK to raise awareness of the KCFP. To conclude the day, the Fellows had a second chance meeting HRH King Charles III at the reception of the 3-days SMI Summit, also held at Hampton Court Palace. It was an energising week filled with meaningful conversations, new connections, and ambitious ideas for Usaia and Nischal. The ACU looks forward to building on this momentum and continuing to support the outstanding work of the King's Fellows.
(Source: The Association of Commonwealth Universities [ACU], London, UK)

Photo credit: Ian Jones

Guest Lectures 03

Mr. Pratarp Singh, Managing Director of ENTEC Pte Limited and Board Member of the Commonwealth Engineers Council, delivered an inspiring talk titled "Engineering the Future: Modern-Day Challenges in a Changing World" to the School of Building and Civil Engineering (SBCE) on Wednesday, 18 February 2026. In his address, he shared insights from over three decades of leadership in engineering across Fiji and the Pacific, highlighting the importance of quality engineering education, ethical practice, and strong infrastructure systems in addressing emerging global challenges. He encouraged students to build strong foundations in science and engineering, embrace innovation, and contribute to sustainable infrastructure development in Small Island Developing States.

04 CETVET Seminar Series

Seminar 1:

Dr. Jane and Dr. Birgit presented the seminar on the topic "Plastic Food Packaging & Health – chemicals as key consideration" on Monday 9th March 2026. Both are from the Food Packaging Forum and they introduced their organization's work on food packaging and plastic chemicals, highlighting the global problem of plastic pollution and its health impacts. They discussed the global plastics treaty negotiations, health effects of plastic chemicals, and challenges with plastic recycling and bioplastics, while presenting research on chemical migration in food packaging and micro/nanoplastics. The discussion covered various research approaches for studying chemicals in plastics, health impacts of micro and nanoplastics, and the development of interactive databases and tools to track chemical measurements and plastic-free packaging commitments.

Dr. Jane is the Managing Director and Chief Scientific Officer at the Food Packaging Forum. She leads scientific research and outreach projects and collaborates with external stakeholders from academia, industry, public interest groups, and media. She also supports the Board in its strategic decision-making.

Abstract:
Plastic food packaging contributes to major environmental challenges such as waste accumulation and the widespread presence of microplastics. Plastics not only persist in the environment but can also release chemicals into foodstuffs, raising concerns for human health. The Food Packaging Forum raises awareness, carries out research, and communicates science related to these topics. To obtain a comprehensive picture on the available science, we compiled multiple datasets on food contact chemicals, microplastics and market initiatives. Plastics used in food packaging contain many chemicals that can migrate into food during transport, storage and use. Some of these chemicals have been detected in human samples, providing evidence of exposure, with food packaging as likely source. To identify the most concerning substances that need regulatory action, information on hazards, exposure, and links to human health effects from epidemiological studies were combined. We also compile initiatives and commitments by retailers to address priority chemicals in food packaging. Together, these data support informed decision-making that protects public health.

Dr. Birgit leads scientific studies and collaborates with researchers and stakeholders across academia, industry, and public interest groups. She co-leads the Food Contact chemicals & Health (FCCH) project that provides evidence-bases on plastic chemicals for researchers and policy makers. She holds a PhD in microbiology from Heinrich-Heine University Düsseldorf and has been working at the Food Packaging Forum since 2013.

Seminar 2:
Generative Artificial Intelligence (GenAI) has evolved as a powerful tool in various domains globally. The rapid adoption of GenAI by individuals in a developing country like Fiji, particularly students and educators, raises several questions, including academic integrity, university policies on GenAI use, data privacy, and learning methodologies. This study aims to evaluate the adoption of GenAI by students and educators at a local university using the Technology Acceptance Model (TAM) and Innovation Diffusion Theory (IDT) frameworks. An online survey was disseminated to the university students using Google Forms after approval from the university research committee. The findings show that perceived usefulness and ease of use directly correlated with the students' intention to use GenAI for learning. The findings also show that knowledge, persuasion, decision, implementation and confirmation affect educators' adoption of GenAI technologies. The study provides valuable insights into the use of GenAI by students and educators in Fiji and explores factors that affect the adoption of GenAI. The findings of the study can further be used to propose a roadmap that will serve as a foundational step for developing policies and guidelines to ensure ethical and responsible implementation of GenAI, hence fostering innovative learning environments.

Dr. Pritika Reddy presented the seminar on the topic "Students and Educators Perspectives on Generative AI in Learning and Teaching" on Friday 13th March 2026.
Dr. Pritika Reddy (PhD) is an Assistant Professor in the Department of Computing Science and Information Systems at Fiji National University. She has more than ten years of experience in tertiary teaching and research. Dr. Reddy's research delves into ICT integrating teaching and learning – digital education and initiatives, digital literacy and digital citizenship, cyber-hygiene, and recently, she has ventured into exploring the adoption and application of GENAI by the Professional, Academics and Students in the South Pacific.

Seminar 3:

For Fiji, a small yet emerging Pacific Island State, the challenge of developing a diverse energy production portfolio could be overcome by exploring indigenous renewable energy resources.

The research focused on the potential for energy generation through biogas recovery from the Natabua Wastewater Treatment Plant (NWWTP). The methodology employed involved utilizing the Chemical Oxygen Demand (COD) mass balance technique to evaluate the potential of biogas available. An analysis of the COD data from NWWTP; compiled between January 2021 to October 2023 by Water Authority of Fiji (WAF), established the annual wastewater conversion efficiency (η) of NWWTP to be around 25%. Further analysis of the COD data estimated an annual methane production capacity of 188,669 m^3 or 127,479 kg. A comparison between the energy extraction potential from NWWTP and some other common sources of energy was conducted. Using the RETScreen software, the potential volume of biogas available within a 60% to 100% capture efficiency (ε_C) range was calculated. Once realized, this project has the potential to supply electrical energy ranging from 407 MWh to 1,018 MWh onto the grid. The net present value (NPV) for the potential power capacities investigated comes to an average of (1.6±0.7) ×10^6 FJD, with a simple payback period of 2.53 years. When compared with the based case, the proposed case has the potential to reduce up to 87.4% of the annual GHG emissions from NWWTP. This study highlights the potential of WWTPs in advancing Fiji's renewable energy ambitions and supporting the United Nations Sustainable Development Goals.

Mr. Ashmit Kumar presented a seminar on the topic "Quantifying Bio-methane Production and Electricity Generation Potential at the Natabua Wastewater Treatment Plant in Fiji" on Thursday 12th March 2026.

Mr. Ashmit Kumar has been working at the Fiji National University for over 8 years now. During this time, he has progressed through roles such as Lab Demonstrator, Physics Lab Technician and Assistant Lecturer. Mr. Kumar has a BSc. double major in Mathematics and Physics, and a PGd. in Physics and has recently graduated with an MSc. in Physics from the Fiji National University. His research interests lie in the areas of Radiation Physics and Renewable Energy.

Research students' achievements and milestones

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Candidature Confirmation 1

Mr. Malakai Tuinasau Tadulala, a Doctor of Philosophy (Environmental Science) student presented his proposal titled "Integrated Water Resources Management Studies for Coastal Aquifers Parts of Fiji - Using Earth Observation, Geospatial Analysis, Geophysics, Water Security and Modelling Techniques" on Wednesday 18th February. His principal supervisor is Dr. Satyanarayan Shastri and co-supervisors are Dr. Ulukalesi Tamata and Dr. Joeli Varo.

Abstract:

The study area focuses on the investigation of coastal aquifers on Western Viti Levu Island (Sigatoka-Nadroga, Nadroga-Nadi, Nadi-Lautoka, and Lautoka-Ba) and the archipelago of Suva, Nukulau Island, Fiji. Pertaining to the postulation effect of a gradual to sudden increase in sea-level rise in Fiji and Pacific Islands. Focusing on complex climate-water predictions, we derived normal-to-worst-case scenarios for the years 2010-2020, 2030-2050, and 2050-2100. Therefore, implementing integrated water resource

studies through the lens of earth observation, geospatial analysis, geophysics, water security, and groundwater modelling to understand the dynamics of the coastal aquifer and its regional and localised hydrogeological characteristics is necessary. Using conceptual geospatial processes, analysis with raster and vector datasets, applying the known GALTI approach to understand the degree of saline intrusion versus water availability, the other is the DRASTIC framework helps us understand groundwater vulnerability, risk, and water-quality hazard, plus the numerical MODFLOW for predicted groundwater regime. Equally, to address the gaps in different hydrogeological groundwater systems during pumping well, whilst do not affect recharge and discharge water resources regime. Hence, relating to the non-biased statistical geospatial analysis using machine learning, regression techniques, sensitivity analysis with multiple parameters known climate resilient dashboards, and framework implemented to understand the accuracy of geoinformatics AUC-ROC. By pinpointing which geospatial parameters are influential, robustness, reliability, and validation of the geospatial models quantified, and the transition of raster pixel resolution recognised. Ensuring that transient and steady-state water quality does not deteriorate from normal to groundwater overexploitation (over-pumping), and other recommended unconventional water resources to address the scenarios in 2010-2020, 2030-2050, to 2050-2100. Hence, to equip government to develop MASTER PLANS for water resource planning for country town planners, civil-water-environmental engineers, economists, geologists, hydrologists, administrators, service providers, and policymakers, to ensure that climate-resilient coastal communities are robust and dynamic.

Candidature Confirmation 2

Mr. Christopher Fanoanoaga a Master by Research (Information system) student presented his proposal titled "Analysing the Factors Contributing to Students' Low Performance in Mathematics and English at Motufoua Secondary School Using Data Mining Techniques" on Thursday, 19 February 2026. His principal supervisor is Dr. Pritika Reddy and co-supervisor Dr. Shiu Kumar.

Abstract:
This study explores the factors influencing students' academic performance in Mathematics and English at Motufoua Secondary School, a government boarding school in Tuvalu. Since achievement in these core subjects is vital for future opportunities, the research focuses on four factors: peer influence and social networking, digital distractions and mobile phone use, boarding school environment, and emotional well-being with homesickness. Using student questionnaires and semi-structured interviews with teachers and wardens, the study will apply Educational Data Mining (EDM) techniques alongside quantitative and qualitative analysis to assess how these factors impact learning outcomes. Statistical tools and thematic coding will be used to strengthen the accuracy of the findings. The results are expected to guide school administrators and teachers in addressing key challenges faced by students. Furthermore, the study will provide evidence-based recommendations for policymakers to enhance academic support systems. Ultimately, it aims to contribute to improving educational quality and student achievement in Tuvalu's secondary education sector.

06 Industry partnership and field trips

Field trip to Waila Water Treatment Plant, The Water Authority of Fiji (WAF)

Staff members from the CETVET schools (SBCE, SEEE and SOS) were part of a team who visited the Waila Water Treatment Plant on 20th February 2026. The visit was to study the function and operating system of the plant. CETVET have a plan to initiate similar type of training facilities to train local trades. Draft MOU is in process and proposal development will follow for training facility setup

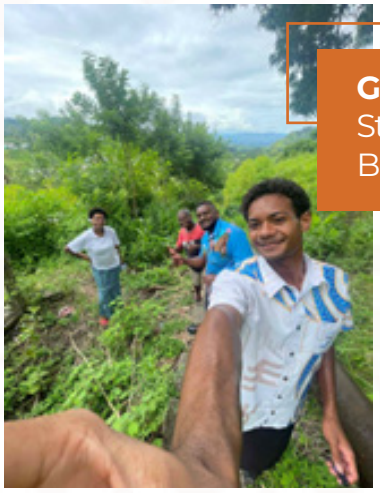
Cyber resilience workshop visit to Australia:

School of Mathematical & Computing Science (SMCS) staff including Anupriya Narayan, Monesh Sami, Vishal Sharma, and Anal Kumar participated in DFAT-funded workshop with Monash University focusing on cyber resilience and postgraduate program enhancement. Topics covered include cyber resilience, how to enhance cyber security knowledge in Fiji, cyber technology etc. Highlights were on cyber resilience, AI governance, cybersecurity education, and national development contributions were shared, emphasizing Fiji's digital security priorities and FNU's strategic role.

Beyond the classroom and engage directly with various communities across Fiji

Throughout February and March 2026, students in the Renewable and Sustainable Energy course (Lecturer: Dr. Ravita Prasad:) embarked on a transformative research journey where their first research assignment challenged students to move beyond the classroom and engage directly with various communities across Fiji.

From the highlands of Bukuya village to the coastal Naroi Community on Moala Island, student groups conducted immersive "talanoa" sessions with local elders and residents. By speaking with "uncles and aunties", village headman and local teachers, students documented the unique socio-economic landscapes, existing resources, and pressing energy challenges such as the reliance on diesel generators or the total lack of grid access in areas like Vaivai, Lautoka. The research culminated in comprehensive reports where students proposed tailored renewable energy and energy efficiency strategies. By analyzing local demographics alongside natural resource availability, these future energy leaders are not just earning marks in their assignments, they are laying the vital groundwork for sustainable development in our communities.



Group 1: Students in Bukuya Village

Group 2: Students in Nausori Highland Village

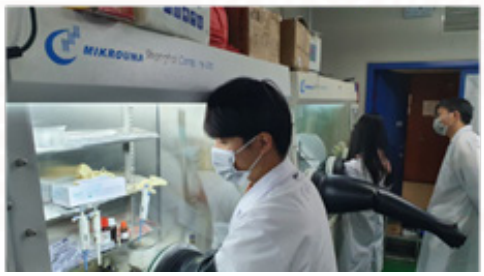
Group 3: Student in Naroi Village, Moala island

Global Surveyors' Day 07

Staff and students were part of GLOBAL SURVEYORS' DAY which was held on 21st March 2026. Global Surveyors' Day is an annual celebration held to highlight the vital contributions of surveyors to society, infrastructure, and land management. It recognizes their role in land boundary, construction, and geospatial technology, aimed at celebrating professionals who shape our world.

08 Innovative Solar Research at School of Sciences

Dr. Kiran Kumar Kondamareddy, an assistant professor at the Department of Pure Sciences, Fiji National University (FNU), is spearheading advanced research into sustainable energy solutions, specifically focusing on next-generation photovoltaics and photocatalysis. His work is characterized by high-level international synergy, primarily through strategic collaborations with the School of Optoelectronic Science and Engineering at Soochow University and the School of Science at Xi'an Polytechnic University in China. In the field of photovoltaics, Dr. Kiran is optimizing the fabrication and stability of organic-inorganic lead halide perovskite solar cells. A key innovation in his research is the development of "hole transport material-free" architectures utilizing low-cost carbon electrodes. This approach significantly reduces manufacturing costs while maintaining high power conversion efficiency. Furthermore, he is investigating wide and narrow bandgap perovskites to engineer high-efficiency tandem solar cells, which surpass the theoretical limits of traditional single-junction devices. This segment of his research, conducted alongside internal collaborator Dr. Salvin Sanjesh Prasad, involves the precise characterization of nanostructured materials to enhance device performance. Parallel to his work in solar energy, Dr. Kiran is advancing the field of photocatalysis. He is working for nanostructures and composite catalyst materials, capable of visible-light-driven degradation of environmental pollutants. This research extends to critical green energy applications, including hydrogen and oxygen evolution reactions (water splitting), electrocatalysis, and piezoelectric systems.



From Campus to Community: FNU Food Science Team Leads UN FAO Fiji Food Security Initiative

09

As a national implementing partner for the UN FAO, funded by the Canadian Government, CETVET's Food Science team delivered food safety technical assistance and community skills training to a rural Fijian farming cooperative, a flagship demonstration of FNU's 2024–2026 Strategic Plan in action.

Partnership & Funding

Implemented in partnership with the United Nations Food and Agriculture Organization (UN FAO), under Canadian Government-funded project GCP/SAP/004/CAN, "Reducing COVID-19 Related Food Insecurity in the Pacific Region." FNU's scope covered food technology and food safety technical assistance to the Wainuqa Farmers' Cooperative Chips Processing Facility, including R&D for products and process line improvement.

When COVID-19 threatened food security across the Pacific, the Food Science team stepped forward. Dr. Ankit Paliwal, Ms. Arti Pillay, and Mr. Asaeli Naika formed the core implementing team, engaging directly with the Wainuqa Farmers' Cooperative under a UN FAO regional programme. This work cuts across all five Strategic Priority Areas of FNU's Strategic Plan 2024–2026.

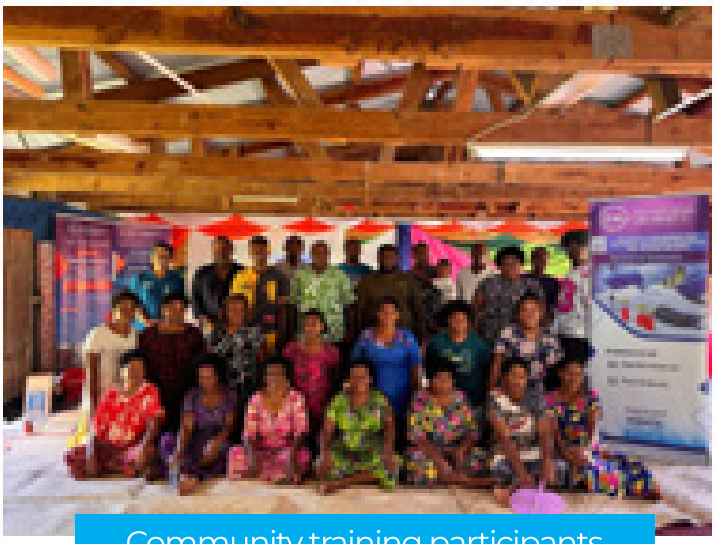
Local Crops, Market-Ready Products

The team conducted R&D for three local crop chip products, cassava (tavioka), plantain (vudi), and sweet potato (kumala), developing Standard Operating Procedures, optimising processing parameters, and reformulating products compliant with Fiji's Food Safety Act. Shelf-life testing confirmed product integrity for at least six months under tropical conditions.

Rebranded tavioka, vudi, and kumala chip products ready for market distribution

10 Investing in People

Acting as the UN FAO's implementing partner under a Canadian Government-funded Pacific initiative establishes FNU as a trusted technical partner on the world stage. The Food Science team drove the project's food technology and safety mandate, setting the groundwork for future regional collaboration. Fifty-one participants — 69% women and approximately 40% youth, received theoretical and hands-on training in food safety, equipment operation, and Good Hygiene Practices, directly advancing FNU's GEDSI Strategy. Sessions followed a commodity-per-day approach on Standard Operating Procedures. "The hands-on sessions were designed so participants could walk away ready to operate independently, that self-sufficiency is the whole point.", Dr. Ankit Paliwal (Assistant Professor), Project Lead.



Community training participants

Dr. Paliwal demonstrating equipment

The Cooperative is now actively pursuing its business and health licensing, a direct outcome of FNU's technical assistance with the relationship providing a natural foundation for continued advisory engagement.

Training women as primary food enterprise operators is a concrete act of economic empowerment. Shelf-stable, safety-compliant products strengthen community health and food system resilience, advancing SDG 2 (Zero Hunger) and SDG 8 (Decent Work and Economic Growth).

The commodity-per-day SOP training model is competency-based vocational education in a community setting, the essence of TVET Pasifika. The project's SOPs and product formulations are strong candidates for integration into FNU's food technology and food safety courses.
Watch the full training: https://www.youtube.com/watch?v=NJVmDmW2s7w

Awards, Recognition and Staff Qualification upgrade 11

Mr. Akshy Kartik Kumar is an Instructor in Civil Engineering recently graduated with Master of Engineering (Water Resources Management) from University of South Australia, Akshy continues to contribute to teaching, research, and curriculum development at FNU. His work focuses on complex hydrological modelling and developing sustainable and climate-resilient water infrastructure solutions for Fiji and the wider Pacific region.

Dr. Deepti Darshani Devi is an academic and researcher in Chemistry at Fiji National University, whose career reflects a deep commitment to scientific excellence and institutional growth. She began her journey in the School of Sciences as an Assistant Lecturer, where she demonstrated a passion for teaching and a keen interest in analytical chemistry. During this time, she pursued her doctoral studies, culminating in the completion of a PhD that focused on the chemical profiling and quality control of Pacific crops, including significant work on Kava. Upon earning her doctorate, she was promoted to the role of Assistant Professor in Chemistry, where she now leads undergraduate and postgraduate research, develops curriculum in analytical methods, and continues her investigations into the pharmacological potential and sustainable applications of Fiji's natural resources.

Ms. Susana Baleilololo, upgraded from Tutor to Assistant Instructor in Biology. She completed her Master of Arts in Climate, Environment and Energy Studies. In 2021, she was a recipient of the Global Korea Scholarship which gave her the opportunity to pursue her graduate studies. She graduated in August 2025. Her thesis was titled: A Socioeconomic analysis of Carbon Credit Earnings in Fiji Based on Drawa Village. Her research looked at the socioeconomic impact of carbon credit earnings in Drawa village, Fiji. The thesis analysed the sustainability of earnings from carbon credits and whether the program is as beneficial to the community and the environment as it claims to be. During her studies she was privileged to be supervised by Professor Seung Jick Yoo who is a renown Environmental Economist in South Korea who is at the forefront of climate negotiations at COP meetings and who was instrumental in the setting up of South Koreas Emission Trading System. Her research interests are in the sustainability of carbon credit earnings in Asia and the Pacific. Her focus is on equity sharing, sustainable management of capitalized natural

Mr. Ashmit Kumar – Assistant Lecturer in Physics.

Mr. Ashmit Kumar has been working at the Fiji National University for over 8 years now. During this time, he has progressed through roles such as Lab Demonstrator, Physics Lab Technician and Assistant Lecturer in Physics. Mr. Kumar has a BSc. double major in Mathematics and Physics, a PGd. in Physics and has recently graduated with a MSc. in Physics from the Fiji National University. His research interests lay in the areas of Radiation Physics and Renewable Energy. For his MSc, the research conducted focused on the potential for energy generation through biogas recovery from Natabua Wastewater Treatment Plant (NWWTP). The methodology employed involved utilizing Chemical Oxygen Demand (COD) mass balance technique to evaluate the potential of biogas available. Using the RETScreen software, the potential volume of biogas available within a 60% to 100% capture efficiency (□_C) range was calculated. Once realized, this project has the potential to supply electrical energy ranging from 407 MWh to 1,018 MWh onto the grid. The net present value (NPV) for the potential power capacities investigated comes to an average of (1.6±0.7) ×10^6 FJD, with a simple payback period of 2.53 years. When compared with the based case, the proposed case has the potential to reduce up to 87.4% of the annual GHG emissions from NWWTP.

Dr. Narala Gangadhara Reddy received GHD foundation visiting scholars award for 2026 to visit University of Sydney for duration of 1 month. Expected visit is in July 2026.

12 Publications

Journals

1) Leyde Briceno Medina, Duy Nguyen, Klaus Joehnk, Ravinesh C. Deo, Mumtaz Ali, Salvin S. Prasad, Nathan Downs, Predicting non-mixing river flow using data-driven approaches: A case study in the Menindee region in Australia, Science of The Total Environment, Volume 1020, 2026, 181541, ISSN 0048-9697. https://doi.org/10.1016/j.scitotenv.2026.181541.
2) Hedstrom Bouatake, Rishi Autar, Veisinia Vatikani, Sushita Sharma, Ronal P. Chand, and Sandeep A. Kumar. (2026). Stabilizing Acceleration Controllers for Multiple Planar Wheelchair Robots in Constrained Environment. Unmanned Systems, 14(2), 1-17. https://doi.org/10.1142/S2301385027500646
3) Seixas Leal Andréia, Deo Ravinesh C., Prasad Salvin S., De Castro Santos Luis Carlos, Ali Mumtaz, & Berton Lilian. (2025). Attentive bidirectional long short-term memory model to predict the remaining useful life of aircraft engines. IEEE Access, 13, 217285-217297. https://doi.org/10.1109/ACCESS.2025.3648287
4) Kunal Kushal Dayal, Rishal A. Singh, Rajnish N. Sharma; Wind resource assessment and energy potential of Natadola in Viti Levu, Fiji. Royal Society Open Science, 13(3), 251378. https://doi.org/10.1098/rsos.251378
5) Kumar, Amit K., Quan Craig., Houniola Maximillan., Singh Satyanand., Kumar Rahul R., Assaf Mansour., & Kumar Sushil. (2025). Advanced encryption techniques in satellite communications with chaotic injections and quantum collapse for enhanced security. International Journal of Satellite Communications and Networking, 38, 1-13. https://doi.org/10.1002/sat.1542
6) Sarkambayeva, Shynara., Singh, Satyanand., Mukhanova, Gulmira., Amralinova, Bakytzhan., & TTuregeldinova,A. (2026). Artificial Intelligence and Business Process Management: A Responsible Framework for Sustainable Transformation. Emerging Science Journal, 10(1), 448–475. https://doi.org/10.28991/ESJ-2026-010-01-022
7) Maheshwari Garvit, Tiwari Babita, Tinka Domonkos., & Singh Satyanand. (2026). Comparative assessment of machine learning approaches for early lung cancer diagnosis. Emerging Science Journal, 10(1), 20–54. https://doi.org/10.28991/ESJ-2026-010-01-02
8) Singh Satyanand., Soni Bhanu P., Sarkambayeva, Shynara., Amralinova, Bakytzhan., & Soni, Poorva. (2026). Scientific mapping of artificial intelligence research in renewable energy through bibliometric analysis using VOSviewer. Discover Applied Sciences, 8(2), 1-22. https://doi.org/10.1007/s42452-025-08079-7
9) Y. Dinesh Kumar Reddy, Dipankar Roy, Ganasen. Nakkeeran, Narala Gangadhara Reddy, Machine learning for land use and land cover mapping in Google earth engine: A review of methods, applications, and challenges. Ecological Frontiers, 1(1), 100012. https://doi.org/10.1016/j.ecofro.2025.12.015

10) Reddy Narala Gangadhara, Karikatti Veeresh.B., Pratap, Bheem., Patil Shabarish., Serjun Vesna., Strength and cost analysis of geopolymer concrete using rice husk ash and GGBS as sustainable cement alternatives. Innovations in Civil Engineering, 12(4), 112–130. https://doi.org/10.1016/j.ice.2025.11.009
11) Lal, Rajnesh., Prasad, Swastika., & Dayal, Kunal. K. (2026). A non-parametric study of temperature trends in Fiji over five decades. Theoretical and Applied Climatology, 158(1), 45–62. https://doi.org/10.1007/s00704-025-05182-9
12) Ravita D. Prasad, From energy performance indicators to institutional strategies: a multi-cluster benchmarking study of Fijian schools, Energy Conversion and Management: X,Volume 30, 2026, 101776, ISSN 2590-1745, https://doi.org/10.1016/j.ecmx.2026.101776.

Book Chapter

1) Maralapalle, Vedprakash., Muktinutalapati, Jayatheja., Chandra, Bogireddy., Narala, Gangadhara.R., Iyer, Rajiv. (2025). Analyzing the role of geospatial technologies and AI in urban infrastructure planning and the development of smart cities, including transportation systems, utilities, and public services. Emerging Science Journal, 10(1), 132-165. https://doi.org/10.28991/ESJ-2026-010-01-08
2) Reddy Narala Gangadhara., Samal Satya Ranjan., & Samal Kundan. (2026). Aquatic macrophyte-based detection and treatment of wastewater pollution. In Wastewater Monitoring and Management by Advanced Approaches (pp. 27–43). Springer, Singapore. https://doi.org/10.1007/978-981-95-2601-7_2
3) Uluiburotu, Jiuliasi.V., Koroi, Luke., Loulou, Autiko.D., Tiwari, Babita., Singh, Satyanand., Assaf, Mansour. (2026). Simulation and analysis of 6G urban macrocell test environment for antenna array design. In M. S. Uddin, D. Singh, T. Ganokratanaa, & G. Kumawat (Eds.), Proceedings of International Conference on Innovations in Data Science: ICIDS 2024 (pp. 323–341). Springer Nature. https://doi.org/10.1007/978-981-96-6328-6

Seed grant project completion

1. Kiran Kumar Kondamareddy, Ashneel Avishek Prasad, Salvin Prasad, Changlei Wang, "Enhancement of the efficiency and stability of low-cost paintable carbon-based planar perovskite solar cells with engineered perovskite/carbon interface using multi-walled carbon nanotubes (MWCNTs) and carbon quantum dots (CQDs)", Seed fund project completion, March 2026.

External Project completion

1) Patrick Mark. Singh, "Fiji bamboo to adapt and mitigate climate change", External project completion, March, 2026

Conferences, Seminar and workshops 13

1) Dr. Narala Gangadhara Reddy, "Modeling Moisture Damage in Saturated Semi-Rigid Pavements Using Pore Pressure and Strength Interaction", 2nd International Conference on Innovations in Sustainable and Digital Construction Practices (ISDCP), 5-6 February 2026, online
2) Dr. Ronesh Sharma, "Computational Prediction of Intrinsically Disordered Regions", Seminar, Science Library, Korea University, January 22nd, 2026.
3) Professor Atul Raturi, Dr. Ravita Prasad, and PhD in Physics student Alvin Datt attended the SEIAPI Solar Conference held in March 2026, which focused on the critical theme of "Transitioning to Solar Energy in the Pacific Islands". The two-day event featured high-level discussions on regional energy resilience, featuring speakers from the Asian Development Bank and the United Nations Development Program. Throughout the sessions, the group

engaged with key topics including building women's capacity in the industry, technical solar solutions, and the implementation of quality frameworks for the Pacific energy transition.

4) Dr. Visheshni Chandra: 11th – 15th January 2026: Workshop on the Policy and Institutional Review Report & Budget Expenditure Report for Fiji by Ministry of Environment and Climate Change and UNDP.

5) Dr. Ravita Prasad: January 7 and 8th 2026: Small Island Developing States Science Initiative (SIDSCI) Workshop. It was a hybrid event where 25 participants joined face-to-face in Miami, Florida, while another 53 participants, including Ravita, joined online. The 2026 SIDSCI Workshop is the initiative's first convening. It sought to enhance small island representation in global climate science assessments, including processes such as the Intergovernmental Panel on Climate Change (IPCC) Assessment Reports, by increasing participants' familiarity with authorship pathways, review processes, and strategic entry points. Catalyze lasting, interdisciplinary research networks across island regions, fostering collaboration among early-career and senior scientists, policy practitioners, and knowledge holders working at the intersection of climate science, adaptation, and resilience. Champion diversity, equity, and inclusion in climate knowledge production, by elevating SIDS-led research agendas, valuing multiple ways of knowing, and supporting leadership from historically underrepresented island communities.

6) Dr. Gangadhara Reddy and Dr. Yogeshwaran Venkatraman delivered a guest talk on Climate Change Symposium held at Fiji National University, Nasinu Campus on the topic "Hydropower, Diversity and the Right to a Healthy Environment.

14 Equipment upgrade

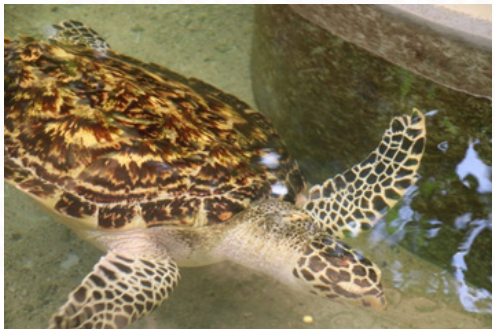
The future of transportation is driven by innovation, School of Transport at CETVET proudly announces the arrival of state-of-the-art teaching simulators, marking a significant step toward modern, hands-on automotive education. These new additions are set to revolutionize both teaching and learning experiences across multiple blocks. By strengthening our engineering pipeline, CETVET can turn scientific discoveries into market-ready technologies that boost productivity.

In G-Block, students will benefit from the Differential-Axle-Drum Brakes Training Model, providing practical insights into core mechanical systems. F-Block is now equipped with the Pneumatic Braking System Training Bench, allowing learners to explore advanced braking technologies widely used in heavy vehicles. Meanwhile, D-Block introduces the Electronically Controlled Automatic Air Suspension System Training Bench, bringing cutting-edge suspension technology into the classroom. Modern problems require modern tools and skilled hands to use them. These simulators offer immense value to our Certificate III, IV, and Diploma students, bridging the gap between theory and industry practice. By enhancing technical competence and confidence, they play a crucial role in reducing employment gaps and preparing students for real-world challenges. At CETVET, we remain committed to empowering learners with industry-relevant skills, ensuring they are ready to drive the future of transportation forward.

Celebrating World Wildlife Day 2026

World Wildlife Day was officially observed on 3 March 2026, and Fiji National University (FNU), in collaboration with the Ministry of Environment and Climate Change, commemorated the occasion on 21 March 2026 at Kula Wild Adventure Park. The event brought together FNU staff and students, including Dr. Harshna Charan, an Assistant Professor in Environmental Sciences, to celebrate the diversity and importance of wild flora and fauna. It also highlighted the many benefits that wildlife and biodiversity provide, while raising awareness of the urgent need to address human-induced species loss and its economic, environmental, and social impacts. This year's theme, "Medicinal and Aromatic Plants (MAPs): Conserving Health, Heritage and Livelihoods," emphasized the important contribution of these plants to human health, cultural heritage, and local livelihoods. It also drew attention to the increasing threats they face from habitat loss, overharvesting, and climate change.

Medicinal and aromatic plants are important not only for health and well-being, but also for ecological balance and a range of industries, including cosmetics, food, and luxury goods. Their genetic resources, together with the traditional knowledge associated with them, continue to support agriculture, medicine, and conservation. Ensuring fair and equitable sharing of the benefits arising from their use is essential in promoting both conservation and sustainable use. Globally, plants such as American ginseng, spikenard, and agarwood are widely recognized for their medicinal value. In Fiji, traditional medicinal plants or wai vakaviti, including lemongrass, noni, giant sage, and lady of the night, are also valued for their healing properties. The celebration reinforced the importance of collective action. Protecting ecosystems and conserving plant and animal species requires the shared commitment of communities, institutions, and governments to ensure that future generations continue to benefit from nature's richness and beauty.



CETVET research newsletter Contact:
School newsletter representatives:
Mr. Shamal Narayan (shamal.narayan@fnu.ac.fj) - SOT
Dr. Shiu Kumar (shiu.kumar@fnu.ac.fj) - SEEE
Ms. Sonam Nair (sonam.nair@fnu.ac.fj) - SMCS
Ms. Madhu Mala (madhu.mala@fnu.ac.fj) - SME
Dr. Ravita Prasad (ravita.prasad@fnu.ac.fj) - SOS
Mr. Ravikant Singh (ravikant.singh@fnu.ac.fj) - SBCE

Newsletter release and coordination:
Ms. Bulou Vuniamatana - Administrator Research CETVET (research-cetvet@fnu.ac.fj)
Dr. Ronesh Sharma, Associate Dean Research & Innovation CETVET (adr-cest@fnu.ac.fj)

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